AMENDMENTS TO THE SPECIFICATION:

Please amend the specification as follows:

Please amend the title as indicated below:

INTERFEROMETRIC-BASED DEVICE AND METHOD FOR DETERMINING ~~THE~~ CHROMATIC DISPERSION OF OPTICAL COMPONENTS USING A POLARIMETER

Please amend the paragraph beginning at line 18 on page 1 as indicated below:

The present invention relates to a device for determining the chromatic dispersion of a sample or optical component with a radiation source for the ~~radiant~~ emittance of a radiation with different wavelengths; ~~wavelengths,~~ an interferometer apparatus, which is radiatable by a radiation source, for generating a sample-specific interference radiation; ~~radiation,~~ a measurement apparatus, with which power changes and polarisation changes of the interference radiation are measurable; ~~measurable,~~ and an evaluation apparatus, with which the chromatic dispersion of the sample is determinable on the basis of the power changes and/or polarisation changes. Moreover, the present invention relates to a corresponding method for determining the chromatic dispersion of a sample.

Please amend the paragraph beginning at line 29 on page 1 as indicated below:

On test and measurement apparatuses for the characterisation of optical components, ~~components~~ two trends to reduce the measurement time can be observed in the development of measurement technology ~~development~~:

Please amend the paragraph beginning at line 33 on page 1 as indicated below:

1. Trend towards "swept-wavelength" systems

With these systems the measurement parameters are not measured point-wise while the wavelength is changed step-wise; ~~step-wise, but~~ rather, a tuneable laser is continuously tuned across the wavelength range to be analysed while the data is ~~are being~~ recorded.

Please amend the paragraph beginning at line 1 on page 3 as indicated below:

On its way through the sample, the light, or measurement object DUT 4, experiences a delay, which shows in a group delay. Said group delay is calculated from the derivative ~~derivation~~ of the phase velocity and is wavelength-dependent. The derivative ~~derivation~~ of the wavelength-dependent group delay gives the wavelength-dependent chromatic dispersion of the measurement object 4 with the dimension ps/nm.

Please amend the paragraph beginning at line 8 on page 3 as indicated below:

A device for the optical determination of the phase delay time is shown in Figure 2, again in a block diagram. Here, the measurement object 4 is analysed in an interferometer 10. There, the light from the tuneable laser 1 is split up in a first coupler 11. This creates two optical ~~paths,~~ paths—the reference arm 12 and the measurement arm ~~13,~~ 13 (in which lies the measurement object 4). ~~in which lies the measurement object 4.~~ A second coupler 14 causes interference of the two beams from the reference arm 12 and the measurement arm 13. Through this combination the two signal field strengths are added. The conversion into an electrical superimposition signal—which is dependent on the phase position, on the attenuation and polarisation transformation in both interferometer arms, and on the wavelength—occurs in the optical detector 5 that follows. ~~In the optical detector 5 that follows the conversion into an electrical superimposition signal occurs, which is dependent on the phase position, the attenuation and the polarisation transformation in both interferometer arms, and on the wavelength.~~ The superimposition signal in turn, together with the wavelength information of the tuneable laser 1, is transmitted to the evaluation unit 7 for determining the chromatic dispersion. When the wavelength is tuned, there results a periodic detector signal, whose period is connected with the group delay difference in both interterometer arms.

Please amend the paragraph beginning at line 33 on page 3 as indicated below:

An improved version of this measurement device for determining the phase delay difference, or chromatic dispersion, therefore envisages that the optical detector 5 is designed in a polarisation-dependent way. One possibility for this consists ~~Consists~~ in the use of a polarisation beam splitter (PBS) 20 including two optical detectors 21 and 22, as is shown in Figure 3. Through the

polarisation beam splitter 20 the superimposed light beam is broken down into two orthogonally polarised beam parts. The powers of these two partial beams, which are detected with the optical detectors 21 and 22, are each passed on to the evaluation unit 7.

Please amend the paragraph beginning at line 8 on page 4 as indicated below:

With this measurement configuration a changing polarization can be detected. The prerequisite for this is, however, that the two polarisations in the interferometer arms 12, 13 do not by chance correspond to the self-polarisation of the PBS 20. Because in this case every detector 21, 22 would measure the power in both interferometer arms 12, 13 ~~and~~ a superimposition of both powers with a periodic superimposition result would not occur. For this reason, conventionally, a polarisation adjustment, e.g. through a polarisation controller 30, must be provided in this measurement configuration, which ensures that the power from the reference arm 12 divides itself approximately evenly to both detectors 21, 22. Only then is a phase comparison between both branches possible for any polarisation in measurement branch 13. An apparatus of this kind for measuring the optical characteristics of a measurement object is known from document EP1207 377A2.

Please amend the paragraph beginning at line 2 on page 5 as indicated below:

According to the present invention, this object is achieved by a device for determining the chromatic dispersion of a sample with a radiation source for emitting a radiation with different ~~wavelengths,~~ wavelengths; an interferometer apparatus, which is irradiated by the radiation source in order to generate a sample-specific interference ~~radiation,~~ radiation; a measurement apparatus, with which power changes and polarisation changes of the interference radiation are ~~measurable,~~ measurable; and an evaluation apparatus, with which the chromatic dispersion of the sample are determinable on the basis of the power changes and polarisation changes, the measurement apparatus comprising a polarimeter.

Please amend the paragraph beginning at line 12 on page 5 as indicated below:

Moreover, according to the present invention, a method for determining the chromatic dispersion of a sample is envisaged, by generating an electromagnetic beam of a radiation with different wavelengths, splitting the beam into a reference beam and a measurement beam with which the sample is irradiated ~~radiographed~~, superimposing the reference beam and the measurement beam whilst maintaining an interference beam, measuring power changes and polarisation changes of the interference beam as a function of the wavelength of the radiation, and determining the chromatic dispersion of the sample on the basis of the power changes and/or polarisation changes, the measuring being performed using a polarimeter.

Please amend the paragraph beginning at line 1 on page 6 as indicated below:

Preferably, the polarimeter can be a complete polarimeter[[,]] that provides measurement values for all four Stokes parameters. With said four Stokes parameters numerous optical characteristics of the measurement object are calculable.

Please amend the paragraph beginning at line 6 on page 6 as indicated below:

The measurement data gained by the polarimeter can easily be recalculated as measurement data that a virtual polarisation beam splitter with an ~~a~~ ideal power distribution would provide. The two orthogonal polarisations of the virtual polarisation beam splitter can be defined for any wavelength such that they break down the power from the reference arm into two partial powers of equal magnitudes ~~partial~~ and that maximum (virtual) power fluctuations are thus detectable. This way, the influence of the polarisation mode dispersion in the reference arm can be reduced. Preferably, the light source consists of a tuneable laser. Said tuneable laser has the advantage that it emits defined polarised light.

Please amend the abstract as indicated below:

It is ~~to be~~ possible to improve the manner in which ~~for~~ the chromatic dispersion of a sample (4) is determined. ~~to be determinable in an improved manner.~~ To this end, ~~end~~ the sample (4) is

irradiated ~~radiographed,~~ in an interferometer (10), with the light of a radiation source (1). A downstream polarimeter (50) measures both the power changes and the polarization changes of the interference radiation. In the downstream evaluation unit (7) the wavelength-dependent chromatic dispersion can be determined.